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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FOWLKES, ANDRE R

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/820,185

Applicant(s)

ZYGMONT ET AL.

Examiner

Andre R. Fowlkes

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/28/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Claims 1-40 are pending.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-4, 11-18, 20, 27-35, 37, 38 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Bowman-Amuah (Bowman), U.S. Patent No. 6,715,145.

As per claim 1, Bowman discloses a method for developing a software system, comprising the steps of:

- **providing an object model expressed in an object modeling computer language, the object model representing a software system and comprising components realizing classes** (col. 176 line 44, "the Unified Modeling Language (UML)", and UML provides the capability to express object models representing software system and comprising components realizing classes),

- **providing a set of one or more metaprograms reflecting a computer system architecture** (col. 176 line 47, "the meta-model (i.e. metaprogram)", reflects a computer system architecture),

- **a meta-machine binding the components to the metaprograms to generate the software system for a computer system having said architecture** (col. 177 lines 3-7, "Code generation. The ability to generate the application ... ( by binding the components to the meta programs such that) ... a change to the model is a change to the code").

As per claim 2 the rejection of claim 1 is incorporated and further, Bowman discloses that **the object modeling computer language is the Unified Modeling Language (UML)** (col. 176 line 44, "the Unified Modeling Language (UML)").

As per claim 3 the rejection of claim 1 is incorporated and further, Bowman discloses:

- **the step of providing an object model** (col. 176 line 44, "the Unified Modeling Language (UML)", and UML provides the capability to express object models representing software system and comprising components realizing classes),

- **the step of providing a set of one or more metaprograms** (col. 176 line 47, "the meta-model (i.e. metaprogram)", reflects a computer system architecture).

As per claim 4 the rejection of claim 1 is incorporated and further, Bowman discloses that **the step of providing an object model comprises a user using a graphical user interface to list a project in a first window** (col. 1 line 52, "a graphical user interface (GUI)", capable of presenting information in multiple windows), **the project representing the object model** (col. 176 line 44, "the Unified Modeling Language (UML)", and UML provides the capability to express object models representing software system and comprising components realizing classes), **and the step of providing one or more metaprograms comprises a user using a graphical user interface to list one or more metaprojects in a second window** (col. 1 line 52, "a graphical user interface (GUI)", displays information in list format), **each metaproject including a list of representations of the metaprograms** (col. 176 line 47, "the meta-model (i.e. metaprogram)", and several metaprograms can be grouped in a list to form a metaproject).

As per claim 11, Bowman also discloses such claimed limitations as addressed in claim 13 below.

As per claim 12, the rejection of claim 1 is incorporated and further, Bowman discloses that **each metaprogram in said set of metaprograms includes code and metacode, and the metacode generates a portion of the source code of the software system by outputting the code** (col. 177 lines 3-7, "Code generation", and code generation tools (i.e. metacode) generate and output code").

As per claim 13 the rejection of claim 12 is incorporated and further, Bowman discloses that **the step of a user using a graphical user interface to invoke a metaprogram editor** (col. 1 line 52, "a graphical user interface (GUI)", can be used to invoke programs).

As per claim 14 the rejection of claim 13 is incorporated and further, Bowman discloses that **a user activating a toggling function of the metaprogram editor to toggle a window between highlighting the code and highlighting the metacode** (col. 1 line 52, "a graphical user interface (GUI)" can invoke and display highlighted sections of text).

As per claim 15 the rejection of claim 1 is incorporated and further, Bowman discloses that **the set of metaprograms includes a model metaprogram that modifies the object model** (col. 177 lines 3-7, "Code generation", and code generation

tools are programs (i.e. metaprograms) that modify other programs and data (i.e. object model)).

As per claim 16 the rejection of claim 1 is incorporated and further, Bowman discloses that **the set of metaprograms includes a component metaprogram invoked once for each component and uses the classes realized by the component to produce a portion of the software system** (col. 177 lines 3-7, "Code generation", and code generation tools (i.e. component metaprograms) use classes realized by object model components to produce software).

As per claim 17 the rejection of claim 1 is incorporated and further, Bowman discloses that **the set of metaprograms includes a class metaprogram that is invoked once for each class realized in each component and that produces a portion of the software system** (col. 177 lines 3-7, "Code generation", and code generation tools (i.e. class metaprograms) use classes realized by object model components to produce software).

As per claim 18, this is a product version of the claimed method discussed above, in claim 1, wherein all claimed limitations also have been addressed above.

As per claims 20, 27-35, 37, 38, and 40, Bowman also discloses such claimed limitations as addressed in claims 3, 4 and 12-17.



***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-10, 19, 21-26, 36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman in view of Mueller, "Instant UML", Wrox Press, 1997.

As per claim 5 the rejection of claim 4 is incorporated and further, Bowman doesn't explicitly disclose that **the object modeling computer language includes an extension mechanism for the specification of user-defined properties and the assignment of these properties and their values to elements of the object model.**

However, Mueller, in an analogous environment, discloses that **the object modeling computer language includes an extension mechanism for the specification of user-defined properties and the assignment of these properties and their values to elements of the object model** (p. 1 lines 6-8, "Stereotypes, tagged values, and constraints facilitate the extension of UML. Stereotypes specialize metamodel classes, tagged values extend the attributes of the metamodel classes and constraints extend the metamodel semantics").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Mueller into the system of Bowman to include extension mechanisms in the object modeling language. The modification would have been obvious because one of ordinary skill in the art would have wanted to extend the capabilities of the object modeling language (Mueller, p. 1 lines 6-8).

As per claim 6 the rejection of claim 5 is incorporated and further, Bowman discloses that **the object modeling computer language is the Unified Modeling Language (UML)** (col. 176 line 44, "the Unified Modeling Language (UML)").

Bowman doesn't explicitly disclose that **the user-defined extension mechanism is a Stereotype**.

However, Mueller, in an analogous environment, discloses that **the user-defined extension mechanism is a Stereotype** (p. 1 lines 6-8, "Stereotypes, tagged values, and constraints facilitate the extension of UML. Stereotypes specialize metamodel classes, tagged values extend the attributes of the metamodel classes and constraints extend the metamodel semantics").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Mueller into the system of Bowman to include stereotype extension mechanisms in the UML object modeling language. The modification would have been obvious because one of ordinary skill in the art would have wanted to extend the capabilities of UML (Mueller, p. 1 lines 6-8).

As per claim 7 the rejection of claim 5 is incorporated and further, Bowman discloses that **the object modeling computer language is the Unified Modeling Language (UML)** (col. 176 line 44, "the Unified Modeling Language (UML)").

Bowman doesn't explicitly disclose that **the user-defined extension mechanism is Tagged Values**.

However, Mueller, in an analogous environment, discloses that **the user-defined extension mechanism is Tagged Values** (p. 1 lines 6-8, "Stereotypes, tagged values, and constraints facilitate the extension of UML. Stereotypes specialize metamodel classes, tagged values extend the attributes of the metamodel classes and constraints extend the metamodel semantics").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Mueller into the system of Bowman to include tagged value extension mechanisms in the UML object modeling language. The modification would have been obvious because one of ordinary skill in the art would have wanted to extend the capabilities of UML (Mueller, p. 1 lines 6-8).

As per claim 8 the rejection of claim 5 is incorporated and further, Bowman discloses **the step of a meta-machine binding the components to the metaprograms comprises the steps of: searching the list of metaprojects for a metaproject having a name matching a name of an implementation target** (col. 177 lines 3-7, "Code generation (i.e. using a meta-machine to bind components to

metaprograms).”, and the system must search to find the desired metaproject/implementation target match before binding the metaprograms that comprise the metaproject), **and storing an indication of an association between the metaproject having the matching name with metaprograms of which representations are listed in the metaproject having the matching name** (col. 177 lines 3-7, “Code generation (i.e. using a meta-machine to bind components to metaprograms).”, and the system must search to find the desired metaproject/implementation target match before binding the metaprograms that comprise the metaproject. Additionally, this information may be stored).

Bowman doesn’t explicitly disclose that **the implementation target is defined by the user-defined extension mechanism associated with the components.**

However, Mueller, in an analogous environment, discloses that **the implementation target is defined by the user-defined extension mechanism associated with the components** (p. 1 lines 6-8, “Stereotypes, tagged values, and constraints facilitate the extension of UML. Stereotypes specialize metamodel classes, tagged values extend the attributes of the metamodel classes”).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Mueller into the system of Bowman to define the implementation target by the user-defined extension mechanisms. The modification would have been obvious because one of ordinary skill in the art would have wanted to use the extended the capabilities of UML to specify specific properties for each class extension (Mueller, p. 1 line 11- p.2 line 6).

As per claim 9 the rejection of claim 8 is incorporated and further, Bowman discloses that **the object modeling computer language is the Unified Modeling Language (UML)** (col. 176 line 44, "the Unified Modeling Language (UML)").

Bowman doesn't explicitly disclose that **the user-defined extension mechanism is a Stereotype**.

However, Mueller, in an analogous environment, discloses that **the user-defined extension mechanism is a Stereotype** (p. 1 lines 6-8, "Stereotypes, tagged values, and constraints facilitate the extension of UML. Stereotypes specialize metamodel classes, tagged values extend the attributes of the metamodel classes and constraints extend the metamodel semantics").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Mueller into the system of Bowman to include stereotype extension mechanisms in the UML object modeling language. The modification would have been obvious because one of ordinary skill in the art would have wanted to extend the capabilities of UML (Mueller, p. 1 lines 6-8).

As per claim 10 the rejection of claim 8 is incorporated and further, Bowman discloses that **the object modeling computer language is the Unified Modeling Language (UML)** (col. 176 line 44, "the Unified Modeling Language (UML)").

Bowman doesn't explicitly disclose that **the user-defined extension mechanism is Tagged Values**.

However, Mueller, in an analogous environment, discloses that **the user-defined extension mechanism is Tagged Values** (p. 1 lines 6-8, "Stereotypes, tagged values, and constraints facilitate the extension of UML. Stereotypes specialize metamodel classes, tagged values extend the attributes of the metamodel classes and constraints extend the metamodel semantics").

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of Mueller into the system of Bowman to include tagged value extension mechanisms in the UML object modeling language. The modification would have been obvious because one of ordinary skill in the art would have wanted to extend the capabilities of UML (Mueller, p. 1 lines 6-8).

As per claims 19, 21-26, 36, and 39, the combination of Bowman and Mueller also discloses such claimed limitations as addressed in claims 5-10, above.

### ***Conclusion***


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre R. Fowlkes whose telephone number is (703)305-8889. The examiner can normally be reached on Monday - Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703)305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2122

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARF



**TUAN DAM**  
**SUPERVISORY PATENT EXAMINER**